Global existence results for the Incompressible Porous Media equation (IPM). Diego Córdoba ICMAT

In this talk we will present two global existence results for IPM in two different settings. First we will consider solutions where the density takes two constant values at each side of a moving interface. This is known as the Muskat problem. We prove a global existence result of a unique strong solution for the 2D stable Muskat problem with arbitrary large finite slopes and finite energy. For the second setting we prove global existence of smooth solutions with bounded density and finite energy in a confined scenario. The first part is a joint work with Omar Lazar and the second part is a joint work with Angel Castro and Daniel Lear.